

AMENDED SET OF CLAIMS

1. (Previously Presented) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) polypeptide that has the amino acid sequence of SEQ ID NO:22 with the exception that a Leu residue is substituted for the Phe residue at position 64 of SEQ ID NO:22.

2. (Previously Presented) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) polypeptide that has the amino acid sequence of SEQ ID NO:22 with the exception that an amino acid residue selected from the group consisting of Leu, Ile, Val, Gly and Ala is substituted for the Phe residue at position 64 of SEQ ID NO:22.

3. (Original) The nucleic acid molecule according to claim 2 wherein a Leu residue is substituted for the Phe residue at position 64 of SEQ ID NO:22 which is further substituted in that a His residue is substituted for the Tyr residue at position 66 of SEQ ID NO:22.

4. (Original) The nucleic acid molecule according to claim 2 wherein a Ile residue is substituted for the Phe residue at position 64 of SEQ ID NO:22 which is further substituted in that a His residue is substituted for the Tyr residue at position 66 of SEQ ID NO:22.

5. (Original) The nucleic acid molecule according to claim 2 wherein a Ala residue is substituted for the Phe residue at position 64 of SEQ ID NO:22 which is further substituted in that a His residue is substituted for the Tyr residue at position 66 of SEQ ID NO:22.

6. (Original) The nucleic acid molecule according to claim 2 wherein a Val residue is substituted for the Phe residue at position 64 of SEQ ID NO:22 which is further substituted in that a His residue is substituted for the Tyr residue at position 66 of SEQ ID NO:22.

7. (Original) The nucleic acid molecule according to claim 2 wherein a Gly residue is substituted for the Phe residue at position 64 of SEQ ID NO:22 which is further substituted in that

a His residue is substituted for the Tyr residue at position 66 of SEQ ID NO:22.

8. (Original) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) having the amino acid sequence of SEQ ID NO: 16.

9. (Original) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) having the amino acid sequence of SEQ ID NO: 18.

10. (Original) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) having the amino acid sequence of SEQ ID NO: 20.

11. (Original) An expression vector comprising suitable expression control sequences operatively linked to a nucleic acid molecule according to claim 1.

12. (Original) A recombinant host cell comprising an expression vector that comprises suitable expression control

sequence operatively linked to a nucleic acid molecule according to claim 1.

13. (Cancelled).

14. (Previously Presented) A nucleic acid molecule comprising a nucleotide sequence encoding a protein of interest, wherein said nucleic acid is fused to the nucleotide sequence encoding a Green Fluorescent Protein (GFP) according to claim 1.

15-17. (Cancelled).

18. (Previously Presented) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) having an amino acid sequence in which the amino acid Phe immediately upstream of the chromophore is substituted with an amino acid selected from the group consisting of Leu, Ile, Val, Gly, and Ala, wherein said chromophore has an amino acid sequence selected from the group consisting of SerTyrGly, SerHisGly, ThrHisGly and ThrTyrGly, and wherein said substituted GFP exhibits increased fluorescence at the same wavelength at a temperature of 30°C or above, relative to a GFP lacking the above substitution, when expressed in a host cell.

19. (Cancelled).

20. (Original) An expression vector comprising suitable expression control sequences operatively linked to a nucleic acid molecule according to claim 18.

21. (Original) A recombinant host cell comprising an expression vector that comprises suitable expression control sequence operatively linked to a nucleic acid molecule according to claim 18.

22. (Cancelled).

23. (Previously Presented) A nucleic acid molecule comprising a nucleotide sequence encoding a protein of interest, wherein said nucleic acid is fused to the nucleotide sequence encoding a Green Fluorescent Protein (GFP) according to claim 18.

24-25. (Cancelled).

26. (Currently Amended) A nucleic acid molecule according to claim 18, wherein ~~said molecule comprises at least~~ a Leu residue is substituted for the Phe residue at position 64 of SEQ ID NO: 22.

27-37 (Cancelled).

38. (Previously Presented) The nucleic acid molecule according to claim 18, wherein a Leu residue is substituted for the Phe residue.

39. (Previously Presented) The nucleic acid molecule according to claim 18, wherein a Ile residue is substituted for the Phe residue.

40. (Previously Presented) The nucleic acid molecule according to claim 18, wherein a Ala residue is substituted for the Phe residue.

41. (Previously Presented) The nucleic acid molecule according to claim 18, wherein a Val residue is substituted for the Phe residue.

42. (Previously Presented) The nucleic acid molecule according to claim 18, wherein a Gly residue is substituted for the Phe residue.

43. (Previously Presented) The nucleic acid molecule according to claim 18, wherein said substituted GFP exhibits increased fluorescence at the same wavelength at a temperature of from 32°C to 39°C.

44. (Previously Presented) The nucleic acid molecule according to claim 18, wherein said substituted GFP exhibits increased fluorescence at the same wavelength at a temperature of from 35°C to 38°C.

45. (Previously Presented) The nucleic acid molecule according to claim 18, wherein said substituted GFP exhibits increased fluorescence at the same wavelength at a temperature of about 37°C.

46. (Previously Presented) The nucleic acid molecule according to claim 18, wherein said GFP is derived from *Aequoria victorea* or *Renilla reniformis*.

47. (Cancelled).

48. (Currently Amended) The nucleic acid molecule according to claim 18, wherein said unsubstituted GFP is obtained from *Aequoria victorea*.

49. (Currently Amended) The nucleic acid molecule according to claim 18, wherein said unsubstituted GFP is obtained from *Renilla reniformis*.

50. (Previously Presented) The nucleic acid molecule according to claim 18, wherein said GFP has the amino acid sequence of SEQ ID NOs: 16, 18, 20 or 22.

51. (New) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) comprising an amino acid sequence in which the amino acid immediately upstream of the chromophore is substituted with an amino acid selected from the



group consisting of Leu, Ile, Val, Gly, and Ala, wherein said chromophore has an amino acid sequence selected from the group consisting of SerTyrGly, SerHisGly, ThrHisGly and ThrTyrGly, and wherein said substituted GFP exhibits increased fluorescence at the same wavelength at a temperature of 30°C or above, relative to a GFP lacking the above substitution, when expressed in a host cell.